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genetic. To become inherited, a modification must produce changes in the energy of the germ plasm. All comparisons between diverse mechanisms are inexact analogies, but in most phylogenetic research we must base upon these. The unit of comparison is the whole individual during its life history and not any selected stage of it. The author inclines very strongly to Hatschek's trochophore theory, viz., that the free larvæ of marine annelids show uniformity of structure and these are all modifications of one kind. The earlier the modifications appear the more apt they are to be inherited. If the free swimming larvæ were a repetition of an ancestral adult condition, why should it not be equally conserved in marine and fresh water life?

*Die Ameise*, von K. ESCHERICH. Vieweg & Sohn, Braunschweig, 1906. pp. 232.

The author has here gathered the main results of the studies of nearly half a century and presented them in a systematic, critical way with 68 illustrations. The one great family of formicidæ comprises over five thousand species, sub-species and varieties. There are 170 genera and 5 great sub-families. There are enormous variations. The distribution of ants is almost worldwide between the polar circles. Although their optimal habitat seems to be the tropics, they have sometimes transcended both the Antarctic and the Arctic circle. They have a very common trait of founding states or colonies and the sterile female is greatly in evidence in all the species. While ants are no miniature men, they are no mere reflex automata, but have the psychic qualities of memory, association, perception, utilization of individual sense experience, and thus power of individual plastic adaptation. The latter is most pronounced among the workers, less with the queens and is almost undeveloped in the males. This difference has a very marked reflection in the structure of the brain which differs very much, the gray matter being far more developed in the workers. Something is known of their phylogeny. They long antedated man. Our author thinks that the first ants were winged and that they very slowly lost this trait, but that some species have reverted to wings, remarkable as this is. He also assumes that polymorphism had a slow development and is largely tropogenic. Wasmann has shown that the appearance of pseudogyns has a casual relation with the presence of certain guests of ants. These lived with them first in the symphilia. They were first received, they grew up in the nests and last the ants cared for them. These later destroyed the eggs and larvæ of their hosts. When the first workers appeared, there was, of course, an important change in the habits of these ants. Another phyletic trait is the slow development of the *Pilzgarten*. The writer believes that we can trace pretty directly the development of every stage of this process. He also has something to suggest about the instinct of feigning death, but the most important phyletic contribution is the writer's theory of eight stages in the development of the colonies, illustrated by as many different species. In this way he accounts for slavery, domestication and the development of mixed colonies. He deems that his results are borne out by the experiments of mixing species. On the whole this must be called quite a masterly compend.

*Die Mimik des Denkes*. Von DE SANCTIS. Halle, 1906.

De Sanctis reminds us that the reflexes, pulse, respiration, the pupil, respond with exquisite sensitiveness to psychic states. Thought mimesis comprises first that of sensory attention and second more intellectual inner reflection. The apparatus chiefly involved is the seventh pair of facial nerves, the root of which arises between the